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PATEL, ASHOKKUMAR B	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/982,721	SLOCOMBE ET AL.	
	Examiner	Art Unit	
	Ashok B. Patel	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06/11/2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) *8 and 8-13* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7, 9, 14 and 15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-15 are subject to examination. Claims 8 and 10-13 are cancelled.

2. **In response to the Applicant's response dated 06/11/2007, the previous finality is withdrawn. However, this new Final Action is issued.**

Response to Arguments

3. Applicant's arguments filed 11/16/2006 have been fully considered but they are not persuasive for the following reasons:

Rejections under 35 U.S.C. § 102(e):

Applicant's argument:

"Claim 1, and hence all the claims, include the tern1 "advertising,'. As used in the claims, advertising is used to indicate an available resource in the network. Advertising is a term that is often used by those skilled in the art to refer to a process by which a network entity, such as a router, can propagate or announce reachability, information to other network entity peers. See RFC 1654, 2. Introduction, (incorporated into the Application by reference)."

"To illustrate, in various embodiments, a DNS device normally advertises so that it can be reached under normal conditions. Application, [0040] -[0042]. Under other conditions, such as overload conditions, the DNS device may not advertise so that the DNS device will not be reached. Id."

By contrast, Swildens describes a load balancing system that includes a traffic management system 105 that provides name and address resolution in response to requests from local DNS's 113, 115. Swildens, [0040] (emphasis added). DNS servers

(so-called Speedera servers) in the traffic management system 105 act as the traffic controller for the entire network."

"The reproduced section above notably does not discuss advertising or discontinuing advertising. Importantly, the above: section points out that the DNS server is a fully functioning DNS server. As such, the DNS server in Swildens performs the functions that are. Commonly performed by DNS servers. Specifically, Swildens' traffic management system DNS server provides for name and address resolution when queried by a local client DNS server, Swildens at [0040]."

Examiner's response:

Although the pointed out relevant paragraphs teach the limitations of the claim in question, Applicant seems to misconstrue the teachings of the reference presented by Examiner. Therefore, Examiner would like to present the teachings of the reference in relation to claimed limitations, step-by-step, as follows:

A. Swildens teaches at, as pointed out previously, para. [0371], "The network provides load balancing at the DNS level. As in **content hosting, the customer will** either delegate a DNS name to Speedera or **be assigned a speedera.net domain name.** When the Speedera DNS server receives a request to map a name to IP address it will return an IP address that is best suited to handle the response. The IP address returned will be the server that is closest to the user (latency), has the least load and that is available and can handle hits to that domain name."

As claim recites "advertising, by each of the DNS devices, the common address within the network to indicate that the content is available for retrieval from each of the cache server systems by end user systems communicatively connected to the network", the address that is "content hosting .....be assigned a speedera.net domain name " is the common address that is being advertised. Since that content is retrievable by the end user systems as shown in Fig. 1, it is reachable and thus advertised by each of the DNS devices. And this common address, "speedera.net domain name ", is assigned to the DNS device that "indicate that the content is available for retrieval from each of the cache server systems by end user systems communicatively connected to the network."

B. Swildens teaches at para. [0398]-[0400], "[0398] Terminology [0399] CacheServer (aka WebCache) [0400] A POP server that serves requests that are cached in memory and on disk. [0401] WebCache is the Web caching server software that responds to requests for Web content from clients (Web browsers). If the requested content does not exist in memory or on disk, it generates a request to an origin site to obtain the content. The caching servers write information about the content delivered to log files that are picked up and maintained by the LogServer software.

Thus POP's incorporate "Cache server systems".

C. Swildens teaches at para. para. [0051], "The diagram 200 includes a POP 201, which includes a NetProbes server. Service probes monitor the POP servers to test the availability and load of the services they support."

Thus the POP servers (Cache server systems) are being monitored.

D. Swildens teaches at para. [0047] The DNS server (DNS) can be thought of as the traffic director of the system. It contains a mapping of where resources (grouped by **hostnames)** have been allocated as well as the current state of each resource and their availability to each client. It receives the static information (the mappings) from the configuration file and the dynamic information (resource availability) from the probes. The configuration file also instructs the DNS server how to weight the various criteria available when making its decisions. The DNS is a fully functional DNS server and is compatible with current versions of BIND. Decision criteria cover such areas as resource availability, resource load, latency, static mapping configuration, persistence requirements, fail over logic, weighting parameters, and others, each of which can be alone or combined."

This DNS, that is described above, is element 105 of Fig.1, which is "a fully functional DNS server and is compatible with current versions of BIND. Decision criteria cover such areas as resource availability, resource load, latency, static mapping configuration, persistence requirements, fail over logic, weighting parameters, and others, each of which can be alone or combined." , and as taught by para.[0018], "A configuration file contains the list of hostnames serviced by the network and maps the hostnames to the caching servers that can serve the content for that hostname. Each caching server in the network that needs configuration information has a copy of the appropriate current configuration file. The configuration file that a caching server receives contains all the configuration information for the particular portion of the

network that the server is responsible for. A system administrator can, at any time, push a new configuration file to caching servers."

E. Thus, the availability of the resource, hostname which represents the cache server that hosts the resource as indicated in para.[0018], server is determined, and Inherently if the resource is not available it is not offered as being available.

Rejections under 35 U.S.C. § 103(a):

Applicant's argument:

"Admittedly, the above reproduced section of Myers discloses some aspects of BGP. However, based on this, the Office makes the purely conclusory assertion that "it would have been obvious ... to implement ....statement."

Examiner's response:

As indicated previously, Myers teaches at para. [0011] "Border Gateway Protocol (BGP), the routing protocol that the Internet uses, is not designed to exploit alternate paths to improve performance. BGP has three main goals: basic connectivity, extreme stability, and massive scalability. Each router on the Internet that participates in the BGP protocol only advertises a single route to each possible destination. In other words, BGP explicitly discards information about alternate routes. While this might decrease the quality of the network's routing, it does help to achieve the goals of scalability by decreasing the amount of data exchanged between routers."

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless-

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 4 - 7 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Swildens et al. (hereinafter Swildens) (US 2005/0033858 A1).

Referring to claim 1,

Swildens teaches a method of content delivery in a network, comprising:

associating devices in a Domain Name System (DNS) (para. [0047] The DNS server (DNS) can be thought of as the traffic director of the system. It contains a mapping of where resources (grouped by hostnames) have been allocated as well as the current state of each resource and their availability to each client. It receives the static information (the mappings) from the configuration file and the dynamic information (resource availability) from the probes. The configuration file also instructs the DNS server how to weight the various criteria available when making its decisions. The DNS is a fully functional DNS server and is compatible with current versions of BIND. Decision criteria cover such areas as resource availability, resource load, latency, static mapping configuration, persistence requirements, fail over logic, weighting parameters, and others, each of which can be alone or combined." Note: please note that the configuration file of the DNS server associates DNS server with the cache servers as indicated in para.[0018].) with cache server systems located in the network and maintaining on each of the cache server systems content stored on an origin server

(para. [0018] A configuration file contains the list of hostnames serviced by the network and maps the hostnames to the caching servers that can serve the content for that hostname. Each caching server in the network that needs configuration information has a copy of the appropriate current configuration file. The configuration file that a caching server receives contains all the configuration information for the particular portion of the network that the server is responsible for. A system administrator can, at any time, push a new configuration file to caching servers." Note: These cache servers had the information that origin server has, however these cache servers also contain the configuration file as stated in para.[0047].)

assigning to the DNS device a common address (para. [0371] The network provides load balancing at the DNS level. As in content hosting, the customer will either delegate a DNS name to Speedera or be assigned a speedera.net domain name." Note: be assigned a speedera.net domain name)

advertising, by each of the DNS devices, the common address within the network to indicate that the content is available for retrieval from each of the cache server systems by end user systems communicatively connected to the network (para. [0371] The network provides load balancing at the DNS level. As in content hosting, the customer will either delegate a DNS name to Speedera or be assigned a speedera.net domain name. When the Speedera DNS server receives a request to map a name to IP address it will return an IP address that is best suited to handle the response. The IP address returned will be the server that is closest to the user (latency), has the least load and that is available and can handle hits to that domain name." And para. [0048]

and para. [0057], Note: As stated in para. [0048]. Multiple DNS servers are deployed and also these DNS servers knows which pf the cache servers can deliver the content as stated in para.[0371]);

monitoring one or more load characteristics of one or more of the cache server systems in the network (para. [0051] "The diagram 200 includes a POP 201, which includes a NetProbes server. Service probes monitor the POP servers to test the availability and load of the services they support.", para. [0399] and [0400], "0399] CacheServer (aka WebCache) [0400] A POP server that serves requests that are cached in memory and on disk.", para. [0053], "LOADP, a process running on each server, is implemented as a statistical monitor and is used as a generic service for testing purposes. LOADP provides direct measurement of many system parameters including CPU load, memory usage, swap and disk status, and is used in load balancing decisions. Note: As shown in Fig. 2, POP servers are Cache servers as stated in para. [0399] and [0400], and these Cache servers are being monitored for availability and load.);

determining if one or more of the load characteristics exceeds a predefined overload metric (para. [457] and [0458]; and

for each content cache server system having a load characteristic that exceeds the predefined overload metric, discontinuing advertising of the cache server system by an associated DNS device (para. [0047] The DNS server (DNS) can be thought of as the traffic director of the system. It contains a mapping of where resources (grouped by hostnames) have been allocated as well as the current state of each resource and their

availability to each client. It receives the static information (the mappings) from the configuration file and the dynamic information (resource availability) from the probes. The configuration file also instructs the DNS server how to weight the various criteria available when making its decisions. The DNS is a fully functional DNS server and is compatible with current versions of BIND. Decision criteria cover such areas as resource availability, resource load, latency, static mapping configuration, persistence requirements, fail over logic, weighting parameters, and others, each of which can be alone or combined." Note: The availability of the resource, hostname which represents the cache server that hosts the resource as indicated in para.[0018], server is determined." Inherently if the resource is not available it is not offered as being available.)

Referring to claim 2,

Swildens teaches the method of claim 1, wherein the common address is an anycast address. ([0378] 6. NameServer software on the DNS server returns the Speedera WebCache IP address that is closest to the user, available and least loaded . [0318] NameServer [0319] DNS server software that performs name to IP address mapping. When queried to resolve a name from a client's DNS server, it returns an IP address that has the ability to serve content for that name and that is best suited to handle the request in terms of load (service health), latency, packet loss and availability. The DNS server writes log information to files that are picked up and maintained by the LogServer software." Note: It is the address that is closest to the user that can respond to the client's service request.)

Referring to claim 4,

Swildens teaches the method of claim 1, wherein the cache server systems are geographically distributed across the network. (Fig. 1, Cache servers 103 and 104, para. [0032] When the client 111 requests a customer homepage, tags within the HTML direct the imbedded static content to the network of cache servers 103 and 104. In this example the static content may be tagged with a domain name like customer.speedera.com. Each local DNS in the example is directed to a different resource for each hostname based on several factors, such as proximity to the resource, network congestion, and server load.", Note: Cache servers are shown geographically distributed.)

Referring to claim 5,

Swildens teaches the method of claim 1, wherein the DNS devices are collocated with the cache server systems with which the DNS devices are associate. (Fig.8, [0318] Name Server [0319] DNS server software that performs name to IP address mapping. When queried to resolve a name from a client's DNS server, it returns an IP address that has the ability to serve content for that name and that is best suited to handle the request in terms of load (service health), latency, packet loss and availability. The DNS server writes log information to files that are picked up and maintained by the LogServer software." Note: The reference defines the Name servers as being DNS servers which are collocated with cache server systems at PoPs.)

Referring to claim 6,

Swildens teaches the method of claim 1, wherein each cache server system and associated DNS device are located in a different Internet Service Provider Point of Presence. (Fig.8, elements 802, 803 and 806,, Note: These elements represent different ISP PoPs wherein each locates cache server system and associated DNS device (Name server). [0318] NameServer [0319] DNS server software that performs name to IP address mapping. When queried to resolve a name from a client's DNS server, it returns an IP address that has the ability to serve content for that name and that is best suited to handle the request in terms of load (service health), latency, packet loss and availability. The DNS server writes log information to files that are picked up and maintained by the LogServer software." Note: The reference defines the Name servers as being DNS servers which are collocated with cache server systems at PoPs.)

Referring to claim 7,

Swildens teaches the method of claim 1, wherein each cache server system and associated DNS device is located at or near an entry point of the network. (Fig. 7, elements 702 and 711, [0261] Configuration Files [0262] The configuration file contains all the static information about the Speedera Network. It contains the list of POPS and the servers present at each POP. It also contains the list of hostnames serviced by the Speedera Network and maps the hostnames to the servers that can serve the content for that hostname. Most of the parameters needed to configure SPD are contained in the configuration file and can be used to fine-tune the load-balancing algorithm, frequency of probes etc.", and 0399] CacheServer (aka WebCache) [0400] A POP

server that serves requests that are cached in memory and on disk. Note: SPD and PoPs are located at the entry point of the network and as defined PoP servers include cache servers.)

Referring to claim 9,

Swildens teaches the method of claim 1, wherein at least one of the cache server systems comprises at least two cache servers connected in a cluster, and wherein the at least two cache servers are coupled to a switch usable to select from among the at least two cache servers based on a selection policy. (Fig. 1, elements 103 and 104, When the client 111 requests a customer homepage, tags within the HTML direct the imbedded static content to the network of cache servers 103 and 104. In this example the static content may be tagged with a domain name like customer.speedera.com. Each local DNS in the example is directed to a different resource for each hostname based on several factors, such as proximity to the resource, network congestion, and server load." Note: Cache Server 103 or 104 is selected based on the selection policy to serve the content.)

Referring to claim 14,

Swildens teaches the method of claim 1, further comprising after discontinuing advertisement by a DNS device for an associated cache server system having a toad characteristic that exceeds the predefined overload metric, restarting advertising when the load characteristic decreases below the predefined overload metric.((para. [0047] The DNS server (DNS) can be thought of as the traffic director of the system. It contains a mapping of where resources (grouped by hostnames) have been allocated

as well as the current state of each resource and their availability to each client. It receives the static information (the mappings) from the configuration file and the dynamic information (resource availability) from the probes. The configuration file also instructs the DNS server how to weight the various criteria available when making its decisions. The DNS is a fully functional DNS server and is compatible with current versions of BIND. Decision criteria cover such areas as resource availability, resource load, latency, static mapping configuration, persistence requirements, fail over logic, weighting parameters, and others, each of which can be alone or combined." Note: The availability of the resource, hostname which represents the cache server that hosts the resource as indicated in para.[0018], server is determined." Inherently if the resource is available it is offered as being available.)

Referring to claim 15,

Swildens teaches the method of claim I, further comprising, if a DNS device discontinues advertisement of it associated cache server system, continuing to use the cache server system by another system that has already resolved a DNS name to the DNS device, until the DNS name expires (Fig.8, elements 802, 803 and 806,, Note: These elements represent different ISP PoPs wherein each locates cache server system and associated DNS device (Name server). [0318] NameServer [0319] DNS server software that performs name to IP address mapping. When queried to resolve a name from a client's DNS server, it returns an IP address that has the ability to serve content for that name and that is best suited to handle the request in terms of load (service health), latency, packet loss and availability. The DNS server writes log

information to files that are picked up and maintained by the LogServer software." Note: The reference defines the Name servers as being DNS servers which are collocated with cache server systems at PoPs.)

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Swildens et al. (hereinafter Swildens) (US 2005/0033858 A1) in view of Myers et al. (hereinafter Myers)(US 2003/0079005 A1),

Referring to claim 3,

Swildens Fails to teach the method of claim 2, wherein the advertising act comprises: sending routing information to a plurality of routers in the network in accordance with the Border Gateway Protocol (Paragraph 0148).

Myers teaches at para. [0011] "Border Gateway Protocol (BGP), the routing protocol that the Internet uses, is not designed to exploit alternate paths to improve performance. BGP has three main goals: basic connectivity, extreme stability, and

massive scalability. Each router on the Internet that participates in the BGP protocol only advertises a single route to each possible destination. In other words, BGP explicitly discards information about alternate routes. While this might decrease the quality of the network's routing, it does help to achieve the goals of scalability by decreasing the amount of data exchanged between routers."

Therefore, It would have been obvious to one of ordinary skill in this art at the time the invention was made to implement the teachings of Myers to advertise the address to the routers in the network in accordance with the BGP protocol such that the specific Cache server be targeted for serving the content to the clients.

This would have been obvious because, as stated by Myers above, "Each router on the Internet that participates in the BGP protocol only advertises a single route to each possible destination. In other words, BGP explicitly discards information about alternate routes. While this might decrease the quality of the network's routing, it does help to achieve the goals of scalability by decreasing the amount of data exchanged between routers."

Conclusion

Examiner's note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the

claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok B. Patel whose telephone number is (571) 272-3972. The examiner can normally be reached on 6:30 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan A. Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abp

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NATHAN FLYNN
SUPERVISORY PATENT EXAMINER